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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,105	01/28/2004	Masahiko Watanabe	023484-0155	9730
22428	7590	04/10/2006	EXAMINER	
FOLEY AND LARDNER LLP			CORRIGAN, JAIME W	
SUITE 500			ART UNIT	
3000 K STREET NW			PAPER NUMBER	
WASHINGTON, DC 20007			3748	

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/765,105

Applicant(s)

WATANABE, MASAHIKO

Examiner

Jaime W. Corrigan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-17 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This Office Action is in response to the Amendment filed on 11-21-05. Claims 1, 4, 9-11 have been amended. Claim 19 has been added. Overall, claims 1-19 are pending in this application. The arguments with respect to the references applied in the previous Office Action were deemed persuasive, however, a new Non-final rejection is set forth below.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujimoto (PN 5,704,316).

Regarding claim 1 Fujimoto discloses a driving rotational member (See Abstract) driven by a crankshaft of the engine; an engine valve (See Figure 2 (86)) provided at an associated one of an intake port and an exhaust port for opening and closing the associated port; a valve spring biasing the engine valve in a direction closing of the associated port of the intake and exhaust ports; a driven (See Figure 2 (20)) rotational member including either one of a camshaft having a cam that opens the engine valve against a spring bias of the valve spring and a separate member integrally connected to

and separable from the camshaft; and an installation-angle adjusting (See Figure 2 (50)) mechanism disposed between the driving rotational member and the driven rotational member to transmit a torque of the driving rotational member to the driven rotational member, the installation-angle adjusting mechanism comprising a movable operating member (See Figure 2 (42)) that varies a relative-rotation phase between the crankshaft and the camshaft by moving the movable operating member in a substantially radial direction of the camshaft by an electromagnetic force (See Figure 2 (40), (66)) depending on engine operating conditions.

Regarding claim 2 Fujimoto discloses the installation-angle adjusting mechanism (See Figure 2 (50)) transmits the torque of the driving rotational member to the driven rotational (See Figure 2 (20)) member by converting a rotational movement produced depending on the engine operating conditions into a radial displacement and further converting the radial displacement into another rotational movement.

Regarding claim 3 Fujimoto discloses the rotational movement produced depending on the engine operating conditions is created by an electromagnetic (See Figure 2 (40), (66)) brake.

Regarding claim 4 Fujimoto discloses the installation-angle adjusting mechanism (See Figure 2 (50)) further comprises a restricting (See Figure 2 (42)) mechanism that restricts the radial displacement of the movable operating member (See Figure 2 (42))

in the substantially radial direction of the camshaft when a relative-rotation phase between the driving rotational member and the driven rotational member reaches a predetermined value.

Regarding claim 5 Fujimoto discloses the restricting (See Figure 2 (42)) mechanism comprises a stopper (See Figure 2 (36)) that an end portion of the movable operating member (See Figure 2 (42)) is brought into abutted-engagement with the stopper when the relative-rotation phase between the driving rotational member and the driven rotational member reaches a substantially maximum value.

Regarding claim 6 Fujimoto discloses the restricting (See Figure 2 (42)) mechanism comprises a stopper (See Figure 2 (36)) that a connected end portion of the link is brought into abutted-engagement with the stopper when the relative-rotation phase between the driving rotational member and the driven (See Figure 2 (20)) rotational member reaches a substantially maximum value.

Regarding claims 7, 8 Fujimoto discloses a cushioning mechanism (See Figure 2 (48)) provided at the stopper (See Figure 2 (36)) or a member which is brought into abutted-engagement with the stopper.

Regarding claim 18 Fujimoto discloses a method for changing a valve timing of an internal combustion engine employing a driving rotational member (See Abstract)

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driven by a crankshaft of the engine, a driven (See Figure 2 (20)) rotational member including either one of a camshaft (See Figure 2 (20)) and a separate member integrally connected to and separable from the camshaft and a phase-angle (See Figure 2 (50)) changing mechanism disposed between the driving rotational member and the driven rotational member for transmitting a torque of the driving rotational member to the driven rotational member and for varying a relative-rotation phase between the crankshaft and the camshaft depending on engine operating conditions, the method comprising: converting a rotational movement produced by an electromagnetic force (See Figure 2 (40), (66)) depending on the engine operating conditions into a radial displacement; and further converting the radial displacement into a rotational movement of the camshaft (See Figure 2 (20)) to produce relative rotation between the driving rotational member and the driven rotational member.

Regarding claim 19 Fujimoto discloses a driving rotational member driven by a crankshaft of the engine; an engine valve provided at an associated one of an intake port and an exhaust port for opening and closing the associated port; a valve spring biasing the engine valve (See Figure 2 (86)) in a direction closing of the associated port of the intake and exhaust ports; a driven (See Figure 2 (20)) rotation member including either of a camshaft (See Figure 2 (20)) having a cam that opens the engine valve against a spring bias of the valve spring and a separate member integrally connected to and separable from the camshaft (See Figure 2 (20)); and an installation-angle (See Figure 2 (50)) adjusting mechanism disposed between the driving rotational member

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and the driven rotational member to transmit a torque of the driving rotational member to the driven rotational member, the installation-angle adjusting mechanism comprising a guide and a movable operating member (See Figure 2 (42)), the guide being provided at either one of the driving rotation member and the driven rotation member for guiding the movable operating member, and the movable operating member varying a relative-rotation phase between the crankshaft and the camshaft by moving in a direction along the guide by an electromagnetic force (See Figure 2 (40), (66)) depending on engine operating conditions.

### ***Allowable Subject Matter***

Claims 9-17 are allowed.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-8, 18 have been considered but are moot in view of the new ground(s) of rejection.

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Thoma (PN 5,189,999) and Hotta et al. (PN 5,275,138) disclose similar valve timing devices.

Any inquiry concerning this communication from the Examiner should be directed to Examiner Jaime Corrigan whose telephone number is (571) 272-4858. The

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Examiner can normally be reached on Monday – Friday from 8:30 a.m. – 6:00 p.m. 2<sup>nd</sup>  
Friday off.

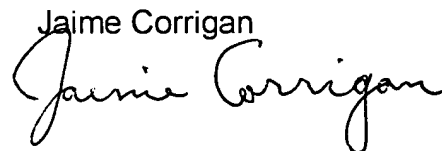
If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Thomas E. Denion, can be reached on (571) 272-4859. The fax number for this group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-3700.

JC

March 27, 2006

Jaime Corrigan  


Patent Examiner  
Art Unit 3748

  
THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700